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Abstract: A fuel cell includes a hydrogen-permeable metal layer 22 that contains a hydrogen-permeable metal, an electrolyte layer 21 that comprises a solid oxide material exhibiting proton conductivity, and an intermediate layer 23 comprising one or more metal layers that are laminated together with and between the hydrogen-permeable metal layer 22 and the electrolyte layer 21. Here, the metal layer in contact with the electrolyte layer 21 includes a common metal element in common with the electrolyte layer 21.

The diagram illustrates the cross-section of the fuel cell. It shows three distinct layers: the top layer is labeled **BaCe_{0.9}Y_{0.1}O₃** and is identified as layer 21; the middle layer is labeled **Ca** and is identified as layer 23; the bottom layer is labeled **Pd** and is identified as layer 22. The layers are shown as being laminated together.

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